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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/601,596	06/24/2003	Kaicheng Chang	CHAN3205/EM	1491
23364	7590	03/21/2006	EXAMINER	
BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314			CHIN, PAUL T	
			ART UNIT	PAPER NUMBER
			3652	
DATE MAILED: 03/21/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/601,596	CHANG ET AL.
	Examiner PAUL T. CHIN	Art Unit 3652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 06 January 2006.

2a)  This action is FINAL.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)  Claim(s) 1-6 and 13 is/are pending in the application.  
4a) Of the above claim(s) 4 is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 1-3,5,6 and 13 is/are rejected.

7)  Claim(s) \_\_\_\_\_ is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on 24 June 2003 is/are: a)  accepted or b)  objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All    b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

1)  Notice of References Cited (PTO-892)      4)  Interview Summary (PTO-413)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)      Paper No(s)/Mail Date. \_\_\_\_ .  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
    Paper No(s)/Mail Date      5)  Notice of Informal Patent Application (PTO-152)  
6)  Other: \_\_\_\_ .

## DETAILED ACTION

1. Applicant's arguments filed January 6, 2006, have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, the arguments are moot in view of a new ground(s) of rejection. A non-final office action follows as below.

### *Election/Restrictions*

2. Applicant's election with traverse of the species of Figs. 4 and 5, Group II, in the reply filed on August 11, 2005, is acknowledged. Note that the election is readable on claims 1-3,5,6, and 13, and claim 4 recites "a rectangular thin layer and the supporting mechanism having two parallel rectangular walls, as shown in Figs. 6-8. Therefore, claim 4 is withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on August 11, 2005.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1,3, 5, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Breu et al. (5,263,753).

Breu et al. (5,263,753) discloses a clutching mechanism comprising at least one elastic layer, a flexible membrane (3) (see Figs. 1 and 2), at least two protrusions (8,8) on the lower surface, each having a tip, a supporting mechanism (4,11) on the upper surface, and a driving mechanism (7), a vacuum pump (lines 61-67 of Col. 1) to deform the layer. Re claim 5, the shape of the protrusion is a cylinder (Figures 1-4).

**Claim Rejections - 35 USC § 103**

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Breu et al. (5,263,753) in view of Regan et al. (US 2004/0002121).

Breu et al. (5,263,753), as presented in section 4 above, does not specifically show that the material selection for the membrane, or the elastic layer is silica gel. However, Regan et al. teaches that a membrane (110) (Fig. 1C) or a flexible membrane (158), or a micro-platform, having a thickness of at least 1 mm, which can be made of silica (paragraphs 46 and 84), and silica gel for air drying (paragraph 80). Accordingly, it would have been obvious to those skilled in the art to provide a material selection of silica or silica gel or Teflon on the membrane or elastic layer of Breu et al. (5,263,753) as taught by Regan et al. (US 2004/0002121) to provide a smooth and soft layer providing flexibility and deformation.

7. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Breu et al. (5,263,753) in view of Conway et al. (5,538,305).

Breu et al. (5,263,753), as presented in section 4 above, shows the robotic gripper, but does not specifically show that the gripper is a micro-gripper. However, Conway et al. (5,538,305) teaches a robot controlled micro-gripper for gripping and releasing very small objects. Accordingly, it would have been obvious to those skilled in the art to

optimize the Breu et al.'s gripper (5,263,753) to be a micro-gripper as taught by Conway et al. (5,538,305) in order to grip very small objects.

***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAUL T. CHIN whose telephone number is (571) 272-6922. The examiner can normally be reached on MON-THURS (7:30 -6:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, EILEEN LILLIS can be reached on (571) 272-6928. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



PAUL T. CHIN  
Examiner  
Art Unit 3652